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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,888	11/26/2003	Mary Jean Cash	10290	1668
7590	09/20/2007		EXAMINER	
Hercules Incorporated Hercules Plaza 1313 N. Market Street Wilmington, DE 19894-0001			ISSAC, ROY P	
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			1623	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/722,888	CASH ET AL.	
	Examiner	Art Unit	
	Roy P. Issac	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 July 2007.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 and 9-31 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-3, 7-8, 32-33 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

This Office Action is in response to Applicant's amendment/ remarks/response filed 10 July, 2007, and claims 1 and 7 have been amended, and claims 32-33 have been newly submitted. Claims 1-3, 7-8 and 32-33 are examined on the merits herein.

Rejections Withdrawn

The objection of claim 3 with respect to the misspelled word "thixotropic" is withdrawn, since the misspelling has been corrected.

The rejection under 35 USC 102(b) of claims 1-3 over Kamide et. al. is withdrawn since applicants amendments have overcome anticipation rejection by inserting the limitation Cellulose I.

The following are new grounds of rejection necessitated by applicants' amendments:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 32-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 32 and 33 recite ranges **0.9 to about 0.45** and **0.8 to about 0.70** respectively. Applicant's amendment with respect to new claims herein has been fully considered, but is deemed to insert new matter into the claims since the specification as originally filed does not provide support for applicants' claim a composition comprising the said ranges. Applicants point to Table 1, page 17 for support for the newly submitted claims with above said ranges. The table provides examples of several relative urea/water ratios with the lowest point as 0.45. The next lowest point is 0.70. There are no examples for any other points in this wide range between 0.7 and 0.45. The range claimed includes ratios below 0.45 since the data point 0.45 is modified by "about". There is no support for the broader range in the specification.

The court held that "subgenus range was not supported by generic disclosure and specific example within the subgenus range"; See e.g. *In re Lukach*, 442 F.2d 967, 169 USPQ 795 (CCPA 1971); the court also held that "a subgenus is not necessarily described by a genus encompassing it and a species upon which it reads" (see *In re Smith*, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972). See also MPEP 2163.

Consequently, there is nothing within the instant specification which would lead the artisan in the field to believe that Applicant was in possession of the invention as it is now claimed. See *Vas-Cath Inc. v. Mahurkar*, 19 USPQ 2d 1111, CAFC 1991, see also *In re Winkhaus*, 188 USPQ 129, CCPA 1975.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 7-8 and 32-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitations, " derived from Cellulose I" in these claims render claims herein indefinite. The recitations, " derived from Cellulose I" of the compounds are not clearly defined in the specification. Hence, one of ordinary skill in the art could not ascertain and interpret the metes and bounds of the patent protection desired as to " derived from Cellulose I" of compounds herein. One of ordinary skill in the art would clearly recognize that " derived from Cellulose I" would read on any those compounds having any widely varying groups that possibly substitute the compounds. For example, several forms of cellulose, Cellulose III and its polymorphs are considered "derived" from Cellulose I.. As such, it is not clear if other forms of cellulose would be covered by the instant claims.

Any significant structural variation to a compound would be reasonably expected to alter its properties; e.g., physical, chemical, physiological effects and functions. Thus, it is unclear and indefinite as to the " derived from Cellulose I" of compounds herein encompassed thereby.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 7-8 and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Lange et. al. (WO 99/20657; PTO-1449).

Lange et. al. discloses carboxymethylcellulose prepared from cellulose I. (Abstract, Tables 1-3). Applicants note that the CMC disclosed in Lange has a tan delta less than one compared to the instant application. However, tan delta is not a limitation in the claims herein. It appears as the CMC of Lange et. al. is similar to that claimed herein and will have the urea/water ratios claimed herein. Since the Office does not have the facilities for preparing the claimed materials and comparing them with prior art inventions, the burden is on Applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 7-8 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamide et. al. (Of Record) in view of Brown et. al. (U.S. Patent No. 5,472,859; PTO-892).

Kamide et. al. discloses the synthesis of carboxymethylcellulose, with a degree of substitution of 0.1 to 0.64. (Abstract). Kamide et. al. discloses carboxymethylcellulose having urea/water ratio of 1.94/97.09. (Example 4, Column 13, lines 5-10). Kamide discloses a carboxymethylcellulose with degrees of substitutions ranging from 0.09 to 0.75. (Example 2, Table 2; Columns 9-10). The CMC was prepared using 10g of regenerated cellulose immersed in 50g of a 5% by weight solution of NaOH (stoichiometric by weight), and further reacting with sodium monochloroacetate. Note that claims 7 and 8 are in the product-by-process format. The CMC of Kamide appears to be the same product as the instant application because it is prepared by a similar procedure and has degree of substitution overlapping with that claimed herein. When the reference teaches a product that appears to be the same as, or an obvious variant of, the product set forth in a product-by-process claim although produced by a different process. See *In re Marosi*, 710 F.2d 799, 218 USPQ 289

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(Fed. Cir. 1983) and *In re Thorpe*, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985).

See also MPEP § 2113. The applicant has noted that the CMCs of Kamida are of relatively low degree of substitution. However, the range of Kamida's degree of substitution (0.1 to 0.64) overlaps with the claimed degree of substitution (about 0.6 to about 1.2) in the instant application.

Kamide et. al. does not expressly disclose the use of CMC derived from Cellulose I.

Brown et. al. discloses a method for the in vitro preparation of cellulose I. (Abstract). Brown et. al. further discloses the method as useful for producing a more useful cellulose I. (Column 3, lines 17-23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare carboxy methyl cellulose using cellulose I disclosed by Brown et. al. Note that substituting one type of cellulose, cellulose I instead of cellulose II in this case, in a method well known for the preparation of carboxy methyl cellulose is considered well within the basic skills of one of ordinary skill in the arts. It has been held that it is within the skill in the art to select optimal parameters, such as amounts of ingredients, in a composition in order to achieve a beneficial effect. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Therefore, one of ordinary skill in the art would have reasonably expected that the use of Cellulose I disclosed by Brown et. al. would have resulted in substantially similar or better effects.

Thus the claimed invention as a whole is clearly *prima facie* obvious over the combined teachings of the prior art.

The following are new or modified rejections necessitated by Applicant's amendment filed 10 July 2007, wherein the limitations in pending claims 1 and 7 as amended now have been changed and claims 2-3 depend from claim 1 and claim 8 depend from claim 7. The limitations in the amended claims have been changed and the breadth and scope of those claims have been changed.

Therefore, rejections from the previous Office Action, mailed 1/11/2007, have been modified and are listed below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation "less than" is not clearly defined in the specification. The lack of lower limit in the ranges claimed renders the claims indefinite.

Response to Arguments/ Amendments

Applicants' arguments filed 7/10/2007 with respect to this rejection of claims section 112, second paragraph, of record in the previous Office Action have been fully considered but they are not deemed persuasive to render the claimed invention patentable over the prior art as further discussed below. Applicants argue that the range "less than 0.9" is not indefinite since of ordinary skill in the art would understand what is claimed by the term. However, the relative ratio claimed herein a broad range and it is not clear from the specification what is the lower limit, especially in view of applicants argument that a value of zero is not attainable. As such, the lack of lower limit in these claims is deemed indefinite and the claims are properly rejected under section 112, second paragraph.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Bormeister et. al. (German Patent No. 233,377 A1 English Translation; Of Record).

Bormeister et. al. discloses a carboxymethylcellulose that forms highly thixotropic aqueous solutions and reversible gels and has thickening effects. (Abstract).

Response to Arguments/ Amendments

Applicants' arguments filed 7/10/2007 with respect to this rejection of claims 1-3 under 35 U.S.C. 102(b), of record in the previous Office Action have been fully considered but they are not deemed persuasive to render the claimed invention patentable over the prior art as further discussed below. Applicants argue that a value of zero for urea/water ratio is unattainable. However, it is not clear whether the CMCs disclosed in Bormeister in fact has a urea/water ratio falling into the ranges claimed herein. As discussed above, the Office does not have the facilities for preparing the claimed materials and comparing them with prior art inventions, the burden is on Applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald*., 619 F.2d 67, 205 USPQ 594 (CCPA 1980).

Conclusion

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roy P. Issac whose telephone number is 571-272-2674. The examiner can normally be reached on 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia Anna Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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 9/17/07